Lines of Time

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Excellently preserved fossil bivalves from the Miocene Pebas Formation in northeastern Peru and southernmost Colombia are examined for their suitability as recorder of seasonal change in precipitation. Stable isotope records from growth increments of modern bivalves, which were monitored during a one year experiment, accurately reflect the seasonal change of ambient water chemistry. Extrapolating these results to the Miocene fossils indicates that rainfall patterns are strikingly similar to today and that the endemic fauna of the Pebas Formation exists (almost) entirely of freshwater molluscs. The isotope records indicate an environment consisting of a wetland system with (interconnected) lakes and floodplains.